What is claimed is:

1. An isolated nucleic acid encoding a mammalian SNORF33 receptor.

2. The nucleic acid of claim 1, wherein the nucleic acid is DNA.

3. The DNA of claim 2, wherein the DNA is cDNA.

4. The DNA of claim 2, wherein the DNA is genomic DNA.

5. The nucleic acid of claim 1, wherein the nucleic acid is RNA.

6. The nucleic acid of claim 1, wherein the mammalian SNORF33 receptor is a human SNORF33 receptor.

7. The nucleic acid of claim 6, wherein the human SNORF33 receptor has an amino acid sequence identical to that encoded by the plasmid pcDNA3.1-hSNORF33-f (ATCC Patent Depository No. PTA-398).

8. The nucleic acid of claim 6, wherein the human SNORF33 receptor has an amino acid sequence identical to that encoded by the plasmid pEXJ-hSNORF33-f (ATCC Patent Depository No. PTA-570).

9. The nucleic acid of claim 6, wherein the human SNORF33 receptor has an amino acid sequence identical to the amino acid sequence shown in Figures 6A-6B (SEQ ID NO:

6).

10. The nucleic acid of claim 1, wherein the mammalian SNORF33 receptor is a rat SNORF33 receptor.

11. The nucleic acid of claim 9, wherein the rat SNORF33 receptor has an amino acid sequence identical to that encoded by the plasmid pcDNA3.1-rSNORF33-f (ATCC Patent Depository No. PTA-102).

12. The nucleic acid of claim 9, wherein the rat SNORF33 receptor has an amino acid sequence identical to the amino acid sequence shown in Figures 4A-4B (SEQ ID NO: 4).

13. The nucleic acid of claim 1, wherein the mammalian SNORF33 receptor is a mouse SNORF33 receptor.

14. The nucleic acid of claim 13, wherein the mouse SNORF33 receptor has an amino acid sequence identical to that encoded by the plasmid pEXJ-mSNORF33-f (ATCC Patent Depository No. PTA-1665).

15. The nucleic acid of claim 13, wherein the mouse SNORF33 receptor has an amino acid sequence identical to the amino acid sequence shown in Figures 20A-20B (SEQ ID NO: 37).

16. A purified mammalian SNORF33 receptor protein.

17. The purified mammalian SNORF33 receptor protein of

claim 16, wherein the SNORF33 receptor protein is a human SNORF33 receptor protein.

18. The purified mammalian SNORF33 receptor protein of claim 16, wherein the SNORF33 receptor protein is a rat or a mouse SNORF33 receptor protein.

19. A vector comprising the nucleic acid of claim 1.

20. A vector comprising the nucleic acid of claim 6.

21. A vector of claim 19 or 20 adapted for expression in a cell which comprises the regulatory elements necessary for expression of the nucleic acid in the cell operatively linked to the nucleic acid encoding the receptor so as to permit expression thereof, wherein the cell is a bacterial, amphibian, yeast, insect or mammalian cell.

22. The vector of claim 21, wherein the vector is a baculovirus.

23. The vector of claim 19, wherein the vector is a plasmid.

24. The plasmid of claim 23 designated pcDNA3.1-hSNORF33-f (ATCC Patent Depository No. PTA-398).

25. The plasmid of claim 23 designated pEXJ-hSNORF33-f (ATCC Patent Depository No. PTA-570).

re Art. 19 Amendment

AMENDED CLAIMS

[received by the International Bureau on 15 December 2000 (15.12.00); original claims 33 and 34 amended; remaining claims unchanged (1 page)]

26. The plasmid of claim 23 designated pcDNA3.1-rSNORF33-f (ATCC Patent Depository No. PTA-102).

27. The plasmid of claim 23 designated pEXJ-mSNORF33-f (ATCC Patent Depository No. PTA-1665).

28. A cell comprising the vector of claim 21.

29. A cell of claim 28, wherein the cell is a non-mammalian cell.

30. A cell of claim 29, wherein the non-mammalian cell is a *Xenopus* oocyte cell or a *Xenopus* melanophore cell.

31. A cell of claim 28, wherein the cell is a mammalian cell.

32. A mammalian cell of claim 31, wherein the cell is a COS-7 cell, a 293 human embryonic kidney cell, a NIH-3T3 cell, a LM(tk-) cell, a mouse Y1 cell, or a CHO cell.

33. The CHO cell of claim 32 designated CHO-ratSNORF33-7 (ATCC Patent Depository No. PTA-1807).

34. The 293 cell of claim 32 designated 293-ratSNORF33-31 (ATCC Patent Depository No. PTA-1806).

35. A cell of claim 24, wherein the cell is an insect cell.

36. An insect cell of claim 29, wherein the insect cell is

an Sf9 cell, an Sf21 cell or a Trichoplusia ni 5B-4 cell.

37. A membrane preparation isolated from the cell of any one of claims 28, 29, 31, 32, 33, 34 or 35.

38. A nucleic acid probe comprising at least 15 nucleotides, which probe specifically hybridizes with a nucleic acid encoding a mammalian SNORF33 receptor, wherein the probe has a sequence complementary to a unique sequence present within one of the two strands of the nucleic acid encoding the mammalian SNORF33 receptor contained in plasmid pcDNA3.1-hSNORF33-f (ATCC Patent Depository No. PTA-398).

39. A nucleic acid probe comprising at least 15 nucleotides, which probe specifically hybridizes with a nucleic acid encoding a mammalian SNORF33 receptor, wherein the probe has a sequence complementary to a unique sequence present within one of the two strands of the nucleic acid encoding the mammalian SNORF33 receptor contained in plasmid pEXJ-hSNORF33-f (ATCC Patent Depository No. PTA-570).

40. A nucleic acid probe comprising at least 15 nucleotides, which probe specifically hybridizes with a nucleic acid encoding a mammalian SNORF33 receptor, wherein the probe has a sequence complementary to a unique sequence present within one of the two strands of the nucleic acid encoding the mammalian SNORF33 receptor contained in plasmid pcDNA3.1-rSNORF33-f (ATCC

Patent Depository No. PTA-102).

41. A nucleic acid probe comprising at least 15 nucleotides, which probe specifically hybridizes with a nucleic acid encoding a mammalian SNORF33 receptor, wherein the probe has a sequence complementary to a unique sequence present within one of the two strands of the nucleic acid encoding the mammalian SNORF33 receptor contained in plasmid pEXJ-mSNORF33-f (ATCC Patent Depository No. PTA-1665).

42. A nucleic acid probe comprising at least 15 nucleotides, which probe specifically hybridizes with a nucleic acid encoding a mammalian SNORF33 receptor, wherein the probe has a sequence complementary to a unique sequence present within (a) the nucleic acid sequence shown in Figures 5A-5B (SEQ ID NO: 5) or (b) the reverse complement thereof.

43. A nucleic acid probe comprising at least 15 nucleotides, which probe specifically hybridizes with a nucleic acid encoding a mammalian SNORF33 receptor, wherein the probe has a sequence complementary to a unique sequence present within (a) the nucleic acid sequence shown in Figures 3A-3B (SEQ ID NO: 3) or (b) the reverse complement thereof.

44. A nucleic acid probe comprising at least 15 nucleotides, which probe specifically hybridizes with a nucleic acid encoding a mammalian SNORF33 receptor, wherein the probe has a sequence complementary to a

unique sequence present within (a) the nucleic acid sequence shown in Figures 19A-19B (SEQ ID NO:36) or (b) the reverse complement thereof.

45. The nucleic acid probe of claim 42, 43 or 44, wherein the nucleic acid is DNA.

46. The nucleic acid probe of claim 42, 43 or 44, wherein the nucleic acid is RNA.

47. An antisense oligonucleotide having a sequence capable of specifically hybridizing to the RNA of claim 5, so as to prevent translation of the RNA.

48. An antisense oligonucleotide having a sequence capable of specifically hybridizing to the genomic DNA of claim 4, so as to prevent transcription of the genomic DNA.

49. An antisense oligonucleotide of claim 47 or 48, wherein the oligonucleotide comprises chemically modified nucleotides or nucleotide analogues.

50. An antibody capable of binding to a mammalian SNORF33 receptor encoded by the nucleic acid of claim 1.

51. An antibody of claim 50, wherein the mammalian SNORF33 receptor is a human SNORF33 receptor, rat or mouse SNORF33 receptor.

52. An agent capable of competitively inhibiting the binding of the antibody of claim 50 to a mammalian

SNORF33 receptor.

53. An antibody of claim 50, wherein the antibody is a monoclonal antibody or antisera.

54. A pharmaceutical composition comprising (a) an amount of the oligonucleotide of claim 47 capable of passing through a cell membrane and effective to reduce expression of a mammalian SNORF33 receptor and (b) a pharmaceutically acceptable carrier capable of passing through the cell membrane.

55. A pharmaceutical composition of claim 54, wherein the oligonucleotide is coupled to a substance which inactivates mRNA.

56. A pharmaceutical composition of claim 55, wherein the substance which inactivates mRNA is a ribozyme.

57. A pharmaceutical composition of claim 55, wherein the pharmaceutically acceptable carrier comprises a structure which binds to a mammalian SNORF33 receptor on a cell capable of being taken up by the cells after binding to the structure.

58. A pharmaceutical composition of claim 57, wherein the pharmaceutically acceptable carrier is capable of binding to a mammalian SNORF33 receptor which is specific for a selected cell type.

59. A pharmaceutical composition which comprises an amount

of the antibody of claim 50 effective to block binding of a ligand to a human SNORF33 receptor and a pharmaceutically acceptable carrier.

60. A transgenic, nonhuman mammal expressing DNA encoding a mammalian SNORF33 receptor of claim 1.

61. A transgenic, nonhuman mammal comprising a homologous recombination knockout of the native mammalian SNORF33 receptor.

62. A transgenic, nonhuman mammal whose genome comprises antisense DNA complementary to the DNA encoding a mammalian SNORF33 receptor of claim 1 so placed within the genome as to be transcribed into antisense mRNA which is complementary to and hybridizes with mRNA encoding the mammalian SNORF33 receptor so as to thereby reduce translation of such mRNA and expression of such receptor.

63. The transgenic, nonhuman mammal of claim 60 or 61, wherein the DNA encoding the mammalian SNORF33 receptor additionally comprises an inducible promoter.

64. The transgenic, nonhuman mammal of claim 60 or 61, wherein the DNA encoding the mammalian SNORF33 receptor additionally comprises tissue specific regulatory elements.

65. A transgenic, nonhuman mammal of claim 60, 61, or 62, wherein the transgenic, nonhuman mammal is a mouse.

66. A process for identifying a chemical compound which specifically binds to a mammalian SNORF33 receptor which comprises contacting cells containing DNA encoding, and expressing on their cell surface, the mammalian SNORF33 receptor, wherein such cells do not normally express the mammalian SNORF33 receptor, with the compound under conditions suitable for binding, and detecting specific binding of the chemical compound to the mammalian SNORF33 receptor.

67. A process for identifying a chemical compound which specifically binds to a mammalian SNORF33 receptor which comprises contacting a membrane preparation from cells containing DNA encoding, and expressing on their cell surface, the mammalian SNORF33 receptor, wherein such cells do not normally express the mammalian SNORF33 receptor, with the compound under conditions suitable for binding, and detecting specific binding of the chemical compound to the mammalian SNORF33 receptor.

68. The process of claim 66 or 67, wherein the mammalian SNORF33 receptor is a human SNORF33 receptor.

69. The process of claim 66 or 67, wherein the mammalian SNORF33 receptor has substantially the same amino acid sequence as the human SNORF33 receptor encoded by plasmid pcDNA3.1-hSNORF33-f (ATCC Patent Depository No. PTA-398).

70. The process of claim 66 or 67, wherein the mammalian SNORF33 receptor has substantially the same amino acid sequence as the human SNORF33 receptor encoded by plasmid pEXJ-hSNORF33-f (ATCC Patent Depository No. PTA-570).

71. The process of claim 66 or 67, wherein the mammalian SNORF33 receptor has substantially the same amino acid sequence as that shown in Figures 6A-6B (SEQ ID NO: 6).

72. The process of claim 66 or 67, wherein the mammalian SNORF33 receptor has the amino acid sequence shown in Figures 6A-6B (SEQ ID NO: 6).

73. The process of claim 66 or 67, wherein the mammalian SNORF33 receptor is a rat or a mouse SNORF33 receptor.

74. The process of claim 66 or 67, wherein the mammalian SNORF33 receptor has substantially the same amino acid sequence as the rat SNORF33 receptor encoded by plasmid pcDNA3.1-rSNORF33-f (ATCC Patent Depository No. PTA-102).

75. The process of claim 66 or 67, wherein the mammalian SNORF33 receptor has substantially the same amino acid sequence as that shown in Figures 4A-4B (SEQ ID NO: 4).

76. The process of claim 66 or 67, wherein the mammalian SNORF33 receptor has the amino acid sequence shown in Figures 4A-4B (SEQ ID NO: 4).

77. The process of claim 66 or 67, wherein the compound is not previously known to bind to a mammalian SNORF33 receptor.

78. A compound identified by the process of claim 77.

79. A process of claim 66 or 67, wherein the cell is an insect cell.

80. The process of claim 66 or 67, wherein the cell is a mammalian cell.

81. The process of claim 80, wherein the cell is nonneuronal in origin.

82. The process of claim 81, wherein the nonneuronal cell is a COS-7 cell, 293 human embryonic kidney cell, a CHO cell, a NIH-3T3 cell, a mouse Y1 cell, or a LM(tk-) cell.

83. A process of claim 80, wherein the compound is a compound not previously known to bind to a mammalian SNORF33 receptor.

84. A compound identified by the process of claim 83.

85. A process involving competitive binding for identifying a chemical compound which specifically binds to a mammalian SNORF33 receptor which comprises separately contacting cells expressing on their cell surface the mammalian SNORF33 receptor, wherein such cells do not

normally express the mammalian SNORF33 receptor, with both the chemical compound and a second chemical compound known to bind to the receptor, and with only the second chemical compound, under conditions suitable for binding of such compounds to the receptor, and detecting specific binding of the chemical compound to the mammalian SNORF33 receptor, a decrease in the binding of the second chemical compound to the mammalian SNORF33 receptor in the presence of the chemical compound being tested indicating that such chemical compound binds to the mammalian SNORF33 receptor.

86. A process involving competitive binding for identifying a chemical compound which specifically binds to a mammalian SNORF33 receptor which comprises separately contacting a membrane preparation from cells expressing on their cell surface the mammalian SNORF33 receptor, wherein such cells do not normally express the mammalian SNORF33 receptor, with both the chemical compound and a second chemical compound known to bind to the receptor, and with only the second chemical compound, under conditions suitable for binding of such compounds to the receptor, and detecting specific binding of the chemical compound to the mammalian SNORF33 receptor, a decrease in the binding of the second chemical compound to the mammalian SNORF33 receptor in the presence of the chemical compound being tested indicating that such chemical compound binds to the mammalian SNORF33 receptor.

87. A process of claim 85 or 86, wherein the mammalian SNORF33 receptor is a human SNORF33 receptor.

88. A process of claim 85 or 86, wherein the mammalian SNORF33 receptor is a rat or a mouse SNORF33 receptor.

89. The process of claim 85 or 86, wherein the cell is an insect cell.

90. The process of claim 85 or 86, wherein the cell is a mammalian cell.

91. The process of claim 90, wherein the cell is nonneuronal in origin.

92. The process of claim 91, wherein the nonneuronal cell is a COS-7 cell, 293 human embryonic kidney cell, a CHO cell, a NIH-3T3 cell, a mouse Y1 cell, or a LM(tk-) cell.

93. The process of claim 92, wherein the compound is not previously known to bind to a mammalian SNORF33 receptor.

94. A compound identified by the process of claim 93.

95. A method of screening a plurality of chemical compounds not known to bind to a mammalian SNORF33 receptor to identify a compound which specifically binds to the mammalian SNORF33 receptor, which comprises

(a) contacting cells transfected with, and expressing, DNA encoding the mammalian SNORF33 receptor with a compound known to bind specifically to the mammalian SNORF33 receptor;

(b) contacting the cells of step (a) with the plurality of compounds not known to bind specifically to the mammalian SNORF33 receptor, under conditions permitting binding of compounds known to bind to the mammalian SNORF33 receptor;

(c) determining whether the binding of the compound known to bind to the mammalian SNORF33 receptor is reduced in the presence of the plurality of compounds, relative to the binding of the compound in the absence of the plurality of compounds; and if so

(d) separately determining the binding to the mammalian SNORF33 receptor of each compound included in the plurality of compounds, so as to thereby identify any compound included therein which specifically binds to the mammalian SNORF33 receptor.

96. A method of screening a plurality of chemical compounds not known to bind to a mammalian SNORF33 receptor to identify a compound which specifically binds to the mammalian SNORF33 receptor, which comprises

(a) contacting a membrane preparation from cells

transfected with, and expressing, DNA encoding the mammalian SNORF33 receptor with the plurality of compounds not known to bind specifically to the mammalian SNORF33 receptor under conditions permitting binding of compounds known to bind to the mammalian SNORF33 receptor;

(b) determining whether the binding of a compound known to bind to the mammalian SNORF33 receptor is reduced in the presence of the plurality of compounds, relative to the binding of the compound in the absence of the plurality of compounds; and if so

(c) separately determining the binding to the mammalian SNORF33 receptor of each compound included in the plurality of compounds, so as to thereby identify any compound included therein which specifically binds to the mammalian SNORF33 receptor.

97. A method of claim 95 or 96, wherein the mammalian SNORF33 receptor is a human SNORF33 receptor.

98. A method of claim 95 or 96, wherein the mammalian SNORF33 receptor is a rat or a mouse SNORF33 receptor.

99. A method of claim 95 or 96, wherein the cell is a mammalian cell.

100. A method of claim 99, wherein the mammalian cell is

non-neuronal in origin.

101. The method of claim 100, wherein the non-neuronal cell is a COS-7 cell, a 293 human embryonic kidney cell, a LM(tk-) cell, a CHO cell, a mouse Y1 cell, or an NIH-3T3 cell.

102. A method of detecting expression of a mammalian SNORF33 receptor by detecting the presence of mRNA coding for the mammalian SNORF33 receptor which comprises obtaining total mRNA from the cell and contacting the mRNA so obtained with the nucleic acid probe of claim 38, 39, 40, 41, 42, 43 or 44 under hybridizing conditions, detecting the presence of mRNA hybridized to the probe, and thereby detecting the expression of the mammalian SNORF33 receptor by the cell.

103. A method of detecting the presence of a mammalian SNORF33 receptor on the surface of a cell which comprises contacting the cell with the antibody of claim 50 under conditions permitting binding of the antibody to the receptor, detecting the presence of the antibody bound to the cell, and thereby detecting the presence of the mammalian SNORF33 receptor on the surface of the cell.

104. A method of determining the physiological effects of varying levels of activity of mammalian SNORF33 receptors which comprises producing a transgenic, nonhuman mammal of claim 60 whose levels of mammalian SNORF33 receptor activity are varied by use of an

inducible promoter which regulates mammalian SNORF33 receptor expression.

105. A method of determining the physiological effects of varying levels of activity of mammalian SNORF33 receptors which comprises producing a panel of transgenic, nonhuman mammals of claim 60 each expressing a different amount of mammalian SNORF33 receptor.

106. A method for identifying an antagonist capable of alleviating an abnormality wherein the abnormality is alleviated by decreasing the activity of a mammalian SNORF33 receptor comprising administering a compound to the transgenic, nonhuman mammal of claim 60, 61, or 62, and determining whether the compound alleviates any physiological and/or behavioral abnormality displayed by the transgenic, nonhuman mammal as a result of overactivity of a mammalian SNORF33 receptor, the alleviation of such an abnormality identifying the compound as an antagonist.

107. The method of claim 106, wherein the mammalian SNORF33 receptor is a human SNORF33 receptor, a rat or a mouse SNORF33 receptor.

108. An antagonist identified by the method of claim 106.

109. A composition comprising an antagonist of claim 108 and a carrier.

110. A method of treating an abnormality in a subject wherein the abnormality is alleviated by decreasing the activity of a mammalian SNORF33 receptor which comprises administering to the subject an effective amount of the pharmaceutical composition of claim 109, thereby treating the abnormality.

111. A method for identifying an agonist capable of alleviating an abnormality in a subject wherein the abnormality is alleviated by increasing the activity of a mammalian SNORF33 receptor comprising administering a compound to the transgenic, nonhuman mammal of claim 60, 61, or 62, and determining whether the compound alleviates any physiological and/or behavioral abnormality displayed by the transgenic, nonhuman mammal, the alleviation of such an abnormality identifying the compound as an agonist.

112. The method of claim 111, wherein the mammalian SNORF33 receptor is a human SNORF33 receptor, a rat or a mouse SNORF33 receptor.

113. An agonist identified by the method of claim 112.

114. A composition comprising an agonist identified by the method of claim 113 and a carrier.

115. A method of treating an abnormality in a subject wherein the abnormality is alleviated by increasing the activity of a mammalian SNORF33 receptor which comprises administering to the subject an effective

amount of the composition of claim 114 so as to thereby treat the abnormality.

116. A method for diagnosing a predisposition to a disorder associated with the activity of a specific mammalian allele which comprises:

(a) obtaining DNA of subjects suffering from the disorder;

(b) performing a restriction digest of the DNA with a panel of restriction enzymes;

(c) electrophoretically separating the resulting DNA fragments on a sizing gel;

(d) contacting the resulting gel with a nucleic acid probe capable of specifically hybridizing with a unique sequence included within the sequence of a nucleic acid molecule encoding a mammalian SNORF33 receptor and labeled with a detectable marker;

(e) detecting labeled bands which have hybridized to the DNA encoding a mammalian SNORF33 receptor of claim 1 to create a unique band pattern specific to the DNA of subjects suffering from the disorder;

(f) repeating steps (a)-(e) with DNA obtained for diagnosis from subjects not yet suffering from the disorder; and

(g) comparing the unique band pattern specific to the DNA of subjects suffering from the disorder from step (e) with the band pattern from step (f) for subjects not yet suffering from the disorder so as to determine whether the patterns are the same or different and thereby diagnose predisposition to the disorder if the patterns are the same.

117. The method of claim 116, wherein a disorder associated with the activity of a specific mammalian allele is diagnosed.

118. A method of preparing the purified mammalian SNORF33 receptor of claim 16 which comprises:

(a) culturing cells which express the mammalian SNORF33 receptor;

(b) recovering the mammalian SNORF33 receptor from the cells; and

(c) purifying the mammalian SNORF33 receptor so recovered.

119. A method of preparing the purified mammalian SNORF33 receptor of claim 16 which comprises:

(a) inserting a nucleic acid encoding the mammalian SNORF33 receptor into a suitable expression vector;

(b) introducing the resulting vector into a suitable host cell;

(c) placing the resulting host cell in suitable conditions permitting the production of the mammalian SNORF33 receptor;

(d) recovering the mammalian SNORF33 receptor so produced; and optionally

(e) isolating and/or purifying the mammalian SNORF33 receptor so recovered.

120. A process for determining whether a chemical compound is a mammalian SNORF33 receptor agonist which comprises contacting cells transfected with and expressing DNA encoding the mammalian SNORF33 receptor with the compound under conditions permitting the activation of the mammalian SNORF33 receptor, and detecting any increase in mammalian SNORF33 receptor activity, so as to thereby determine whether the compound is a mammalian SNORF33 receptor agonist.

121. A process for determining whether a chemical compound is a mammalian SNORF33 receptor antagonist which comprises contacting cells transfected with and expressing DNA encoding the mammalian SNORF33 receptor with the compound in the presence of a known mammalian SNORF33 receptor agonist, under conditions permitting the activation of the mammalian SNORF33 receptor, and

detecting any decrease in mammalian SNORF33 receptor activity, so as to thereby determine whether the compound is a mammalian SNORF33 receptor antagonist.

122. A process of claim 120 or 121, wherein the mammalian SNORF33 receptor is a human SNORF33 receptor, a rat or a mouse SNORF33 receptor.

123. A composition which comprises an amount of a mammalian SNORF33 receptor agonist determined by the process of claim 120 effective to increase activity of a mammalian SNORF33 receptor and a carrier.

124. A composition of claim 123, wherein the mammalian SNORF33 receptor agonist is not previously known.

125. A composition which comprises an amount of a mammalian SNORF33 receptor antagonist determined by the process of claim 121 effective to reduce activity of a mammalian SNORF33 receptor and a carrier.

126. A composition of claim 125, wherein the mammalian SNORF33 receptor antagonist is not previously known.

127. A process for determining whether a chemical compound specifically binds to and activates a mammalian SNORF33 receptor, which comprises contacting cells producing a second messenger response and expressing on their cell surface the mammalian SNORF33 receptor, wherein such cells do not normally express the mammalian SNORF33 receptor, with the chemical compound under conditions

suitable for activation of the mammalian SNORF33 receptor, and measuring the second messenger response in the presence and in the absence of the chemical compound, a change in the second messenger response in the presence of the chemical compound indicating that the compound activates the mammalian SNORF33 receptor.

128. The process of claim 127, wherein the second messenger response comprises chloride channel activation and the change in second messenger is an increase in the level of chloride current.

129. The process of claim 127, wherein the second messenger response comprises intracellular calcium levels and the change in second messenger is an increase in the measure of intracellular calcium.

130. The process of claim 127, wherein the second messenger response comprises release of inositol phosphate and the change in second messenger is an increase in the level of inositol phosphate.

131. A process for determining whether a chemical compound specifically binds to and inhibits activation of a mammalian SNORF33 receptor, which comprises separately contacting cells producing a second messenger response and expressing on their cell surface the mammalian SNORF33 receptor, wherein such cells do not normally express the mammalian SNORF33 receptor, with both the chemical compound and a second chemical compound known to activate the mammalian SNORF33 receptor, and with

only the second chemical compound, under conditions suitable for activation of the mammalian SNORF33 receptor, and measuring the second messenger response in the presence of only the second chemical compound and in the presence of both the second chemical compound and the chemical compound, a smaller change in the second messenger response in the presence of both the chemical compound and the second chemical compound than in the presence of only the second chemical compound indicating that the chemical compound inhibits activation of the mammalian SNORF33 receptor.

132. The process of claim 131, wherein the second messenger response comprises chloride channel activation and the change in second messenger response is a smaller increase in the level of chloride current in the presence of both the chemical compound and the second chemical compound than in the presence of only the second chemical compound.

133. The process of claim 132, wherein the second messenger response comprises change in intracellular calcium levels and the change in second messenger response is a smaller increase in the measure of intracellular calcium in the presence of both the chemical compound and the second chemical compound than in the presence of only the second chemical compound.

134. The process of claim 131, wherein the second messenger response comprises release of inositol phosphate and the change in second messenger response is a smaller

increase in the level of inositol phosphate in the presence of both the chemical compound and the second chemical compound than in the presence of only the second chemical compound.

135. A process of any of claims 127, 128, 129, 130, 131, 132, 133, or 134, wherein the mammalian SNORF33 receptor is a human SNORF33 receptor, a rat or a mouse SNORF33 receptor.

136. The process of any of claims 124, 128, 129, 130, 131, 132, 133, or 134, wherein the cell is an insect cell.

137. The process of any of claims 127, 128, 129, 130, 131, 132, 133, or 134, wherein the cell is a mammalian cell.

138. The process of claim 137, wherein the mammalian cell is nonneuronal in origin.

139. The process of claim 138, wherein the nonneuronal cell is a COS-7 cell, CHO cell, 293 human embryonic kidney cell, NIH-3T3 cell or LM(tk-) cell.

140. The process of claim 127, 128, 129, 130, 131, 132, 133, or 134, wherein the compound is not previously known to bind to a mammalian SNORF33 receptor.

141. A compound determined by the process of claim 140.

142. A composition which comprises an amount of a mammalian SNORF33 receptor agonist determined to be such by the

process of claim 127, 128, 129, or 130, effective to increase activity of the mammalian SNORF33 receptor and a carrier.

143. A composition of claim 142, wherein the mammalian SNORF33 receptor agonist is not previously known.

144. A composition which comprises an amount of a mammalian SNORF33 receptor antagonist determined to be such by the process of claim 131, 132, 133, or 134, effective to reduce activity of the mammalian SNORF33 receptor and a carrier.

145. A composition of claim 144, wherein the mammalian SNORF33 receptor antagonist is not previously known.

146. A method of screening a plurality of chemical compounds not known to activate a mammalian SNORF33 receptor to identify a compound which activates the mammalian SNORF33 receptor which comprises:

(a) contacting cells transfected with and expressing the mammalian SNORF33 receptor with the plurality of compounds not known to activate the mammalian SNORF33 receptor, under conditions permitting activation of the mammalian SNORF33 receptor;

(b) determining whether the activity of the mammalian SNORF33 receptor is increased in the presence of one or more of the compounds; and if so

(c) separately determining whether the activation of the mammalian SNORF33 receptor is increased by any compound included in the plurality of compounds, so as to thereby identify each compound which activates the mammalian SNORF33 receptor.

147. A method of claim 146, wherein the mammalian SNORF33 receptor is a human SNORF33 receptor, a rat or a mouse SNORF33 receptor.

148. A method of screening a plurality of chemical compounds not known to inhibit the activation of a mammalian SNORF33 receptor to identify a compound which inhibits the activation of the mammalian SNORF33 receptor, which comprises:

(a) contacting cells transfected with and expressing the mammalian SNORF33 receptor with the plurality of compounds in the presence of a known mammalian SNORF33 receptor agonist, under conditions permitting activation of the mammalian SNORF33 receptor;

(b) determining whether the extent or amount of activation of the mammalian SNORF33 receptor is reduced in the presence of one or more of the compounds, relative to the extent or amount of activation of the mammalian SNORF33 receptor in the absence of such one or more compounds; and if so

(c) separately determining whether each such compound inhibits activation of the mammalian SNORF33 receptor for each compound included in the plurality of compounds, so as to thereby identify any compound included in such plurality of compounds which inhibits the activation of the mammalian SNORF33 receptor.

149. A method of claim 148, wherein the mammalian SNORF33 receptor is a human SNORF33 receptor, a rat or a mouse SNORF33 receptor.

150. A method of any of claims 146, 147, 148, or 149, wherein the cell is a mammalian cell.

151. A method of claim 150, wherein the mammalian cell is non-neuronal in origin.

152. The method of claim 151, wherein the non-neuronal cell is a COS-7 cell, a 293 human embryonic kidney cell, a LM(tk-) cell or an NIH-3T3 cell.

153. A composition comprising a compound identified by the method of claim 146 or 147 in an amount effective to increase mammalian SNORF33 receptor activity and a carrier.

154. A composition comprising a compound identified by the method of claim 148 or 149 in an amount effective to decrease mammalian SNORF33 receptor activity and a carrier.

155. A method of treating an abnormality in a subject wherein the abnormality is alleviated by increasing the activity of a mammalian SNORF33 receptor which comprises administering to the subject a compound which is a mammalian SNORF33 receptor agonist in an amount effective to treat the abnormality.

156. A method of treating an abnormality in a subject wherein the abnormality is alleviated by decreasing the activity of a mammalian SNORF33 receptor which comprises administering to the subject a compound which is a mammalian SNORF33 receptor antagonist in an amount effective to treat the abnormality.

157. A process for making a composition of matter which specifically binds to a mammalian SNORF33 receptor which comprises identifying a chemical compound using the process of any of claims 66, 67, 85, 86, 95 or 96 and then synthesizing the chemical compound or a novel structural and functional analog or homolog thereof.

158. The process of claims 157, wherein the mammalian SNORF33 receptor is a human SNORF33 receptor, a rat or a mouse SNORF33 receptor.

159. A process for making a composition of matter which specifically binds to a mammalian SNORF33 receptor which comprises identifying a chemical compound using the process of any of claims 120, 127 or 146 and then synthesizing the chemical compound or a novel

structural and functional analog or homolog thereof.

160. The process of claim 159, wherein the mammalian SNORF33 receptor is a human SNORF33 receptor, a rat or a mouse SNORF33 receptor.

161. A process for making a composition of matter which specifically binds to a mammalian SNORF33 receptor which comprises identifying a chemical compound using the process of any of claims 121, 131 or 148 and then synthesizing the chemical compound or a novel structural and functional analog or homolog thereof.

162. The process of claim 161, wherein the mammalian SNORF33 receptor is a human SNORF33 receptor, a rat or a mouse SNORF33 receptor.

163. A process for preparing a composition which comprises admixing a carrier and a pharmaceutically effective amount of a chemical compound identified by the process of any of claims 66, 67, 85, 86, 95 or 96 or a novel structural and functional analog or homolog thereof.

164. The process of claim 163, wherein the mammalian SNORF33 receptor is a human SNORF33 receptor, a rat or a mouse SNORF33 receptor.

165. A process for preparing a composition which comprises admixing a carrier and a pharmaceutically effective amount of a chemical compound identified by the process of any of claims 120, 127 or 146 or a novel structural

and functional analog or homolog thereof.

166. The process of claim 165, wherein the mammalian SNORF33 receptor is a human SNORF33 receptor, a rat or a mouse SNORF33 receptor.

167. A process for preparing a composition which comprises admixing a carrier and a pharmaceutically effective amount of a chemical compound identified by the process of any of claims 121, 131 or 148 or a novel structural and functional analog or homolog thereof.

168. The process of claim 167, wherein the mammalian SNORF33 receptor is a human SNORF33 receptor, a rat or a mouse SNORF33 receptor.